

Application Serial No. 10/577,017
Reply to office action of January 7, 2009

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APR 06 2009

PATENT
Docket: CU-4798

Listing Of The Claims

The listing of claims presented below will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1. (previously presented) An electronic device comprising:
an electronic element; and
an interposer including an interposer base to which the electronic element is joined, and a plurality of post electrodes connected to corresponding electrodes of the electronic element;
wherein the electronic element and the interposer base are integrated with each other by being brought into direct contact with each other, and the post electrodes are formed directly on the corresponding electrodes of the electronic element, and
wherein the electronic element and the interposer base are made of silicon.
2. (previously presented) An electronic device comprising:
an electronic element; and
an interposer including an interposer base to which the electronic element is joined, and a plurality of post electrodes that are disposed inside one or more through holes formed in the interposer base and are connected to corresponding electrodes of the electronic element,
wherein a surface of the electronic element and a surface of the interposer base are integrated with each other by being brought into direct contact with each other, and the post electrodes are formed directly on the corresponding electrodes of the electronic element, and
wherein the electronic element and the interposer base are made of silicon.
3. (original) The electronic device as claimed in claim 1 or 2, wherein the electronic element and the interposer base are made of the same material.

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4. (cancelled)
5. (original) The electronic device as claimed in claim 1 or 2,
wherein a first insulation layer is formed at least in a position on the electronic element to be joined to the interposer base; and
a second insulation layer is formed at least in a position on the interposer base to be joined to the electronic element.
6. (original) The electronic device as claimed in claim 2, wherein the post electrodes are formed in the single through hole.
7. (original) The electronic device as claimed in claim 1 or 2, wherein a recess is formed in the interposer base such that the electronic element is accommodated in the recess.
8. (original) The electronic device as claimed in claim 1 or 2, wherein plural of the electronic elements are mounted to the interposer base.
9. (original) The electronic device as claimed in claim 1 or 2, wherein a back surface of the electronic element is joined to the interposer base.
10. (original) The electronic device as claimed in claim 1 or 2, wherein a sealing resin encapsulating the electronic element is disposed on the interposer base.
11. (original) The electronic device as claimed in claim 1 or 2, wherein the electronic element is a semiconductor chip.
12. (original) The electronic device as claimed in claim 1 or 2, wherein the electronic element is a passive element.

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13. (withdrawn) A method of manufacturing an electronic device, comprising:
an integrating step of integrating an interposer base in which a through hole is formed and an electronic element with each other by bringing a surface of the interposer base and a surface of the electronic element into direct contact with each other;
a post electrode forming step of forming a post electrode inside the through hole and directly on an electrode of the electronic element after the integrating step;
a rewiring forming step of forming a rewiring layer electrically connected to the post electrode; and
an external connection terminal forming step of forming an external connection terminal on the rewiring layer.
14. (withdrawn) A method of manufacturing an electronic device, comprising:
a post electrode forming step of forming a post electrode directly on an electrode of an electronic element;
an integrating step of integrating an interposer base in which a through hole is formed and the electronic element with each other by bringing a surface of the interposer base and a surface of the electronic element into direct contact with each other after the post electrode forming step;
a rewiring forming step of forming a rewiring layer electrically connected to the post electrode; and
an external connection terminal forming step of forming an external connection terminal on the rewiring layer.
15. (withdrawn) The method of forming an electronic device as claimed in claim 14, further comprising:
a protective layer forming step of forming a protective layer on the electronic element, the protective layer being made of an insulating material and adapted to hold the post electrode.
16. (previously presented) An electronic device comprising:
an electronic element; and

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an interposer to which the electronic element is joined, and the interposer including an interposer base;

wherein the electronic element and the interposer are integrated with each other by being brought into direct contact with each other, and

wherein the electronic element and the interposer base are made of silicon.

17. (original) The electronic device as claimed in claim 16,
wherein the electronic element is an optical device; and
the interposer is provided with an optical waveguide optically connected to the optical device.